Grade 6 CRT Item Specifications

"Enduring and Important Knowledge" identified in previous grade-levels may be included within the context of some problems.

Prioritized Standards		Knowledge/Skills Assessed	Item Specifications
1.6.1 Read, write, add, subtract, multiply, and divide using decimals, fractions, and percents. (C) **1.6.2** Apply decimals, fractions, and percents to solve mathematical and practical problems. (P, PS) **1.6.3** Use the concepts of number theory, including prime and composite numbers, factors, multiples, and the rules of divisibility. (C, P, PS) **1.6.6** Compare and order groups of fractions and groups of decimals (e.g., on a number line). (C, P) **1.6.7** Round to a given decimal place; estimate using decimals, fractions, and percents. (C, P, PS) **1.6.9** Use models and drawings to identify, compare, add, and subtract fractions with unlike denominators; use models to translate among fractions, decimals, and percents. (C, P)	**Concepts**	**1.6.1** Identify and write decimals, fractions, and percent number values. Identify and write equivalent decimals, fractions and percents. **1.6.3** Identify prime and composite numbers and factors and multiples of numbers. **1.6.6** Compare groups of fractions and groups of decimals. **1.6.7** Round decimal values to a specified place value. **1.6.9** Use models and drawings to identify fractions and compare fractions with unlike denominators. Use models to translate among fractions, decimals, and percents.	**1.6.1** Equivalent percents limited to 1%, 5%, 10%, 20%, 25%, 50%, 75% and 100%. **1.6.3** Limit to numbers 15 and under for factors and multiples when checking for quick recall. **1.6.6** Do not mix fractions and decimals. **1.6.9** Limit denominators to16. Items should have models of equivalent decimals, fractions and percents
	Procedures	**1.6.2** Solve problems using decimals, fractions and percents. **1.6.3** Determine factors and multiples of prime and composite numbers. Use divisibility rules to factor composite numbers. **1.6.6** Order groups of fractions and groups of decimals (e.g., on a number line). **1.6.7** Estimate using decimals, fractions, and percents. **1.6.9** Use models and drawings to add and subtract fractions with unlike denominators.	**1.6.2** Percents for calculations should be for 100% and under. Percents limited to 1%, 5%, 10%, 20%, 30%, 25%, 40%, 50%, 60%, 70%, 75%, 80%, 90% and 100%. **1.6.3** Limit to numbers greater than 16. Includes LCM and GCF questions. **1.6.6** Do not mix fractions and decimals. **1.6.7** Items may be written in context and one-step only. **1.6.9** Limit denominators to16. Percents limited to 1%, 5%, 10%, 20%, 30%, 25%, 40%, 50%, 60%, 70%, 75%, 80%, 90% and 100%.
	Problem Solving	**1.6.2** Apply decimals, fractions, and percents to solve mathematical and practical real-world problems. **1.6.3** Use the concepts of number theory**,** including prime and composite numbers, factors, multiples, and the rules of divisibility to solve real-world problems. **1.6.7** Use estimation involving decimals, fractions, and percents to solve real-world problems with multi-step situations.	**1.6.2** Item must be a contextual real-world and/or multi-task problem. Percent problems limited to 1%, 5%, 10%, 20%, 30%, 25%, 40%, 50%, 60%, 70%, 75%, 80%, 90% and 100%. **1.6.7** Percent problems limited to 1%, 5%, 10%, 20%, 30%, 25%, 40%, 50%, 60%, 70%, 75%, 80%, 90% and 100%.

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Prioritized Standards		Knowledge/Skills Assessed	Item Specifications
2.6.1 Use and create tables and charts to extend a pattern in order to describe a rule**.** (C, P, PS) **2.6.2** Identify, model, describe, and evaluate relationships using charts and tables, with and without technology. (PS) **2.6.7** Use a rule to create a table and represent the ordered pairs on a coordinate grid. (C, P)	**Concepts**	**2.6.1** Use tables and charts to complete a pattern**.** **2.6.7** Identify, name, or represent points on a coordinate grid.	**2.6.1** Find the missing term in a table or chart representing a sequence or number pattern. **2.6.7** Item can ask to locate a point on a coordinate plane given the coordinates, or identify the coordinates of a given point on a coordinate grid. Must be given as a table of ordered pairs.
	Procedures	**2.6.1** Use tables and charts to extend a pattern**.** **2.6.7**. Use a rule to create a table of ordered pairs; graph ordered pairs that represent a rule or use a table of values.	**2.6.1** Extend the pattern, in a table or chart representing a sequence or number pattern. **1.0.0** Item can have ordered pairs from all four quadrants.
	Problem Solving	**2.6.1** Analyze tables and charts to extend a pattern in order to describe a rule**.** **2.6.2** Identify, model, describe, and evaluate relationships using charts and tables.	**2.6.1** Write the rule to describe a pattern. Rule should be a basic one step rule (e.g., n + 4). Item may give the student the rule and ask to make the pattern. **2.6.2** Item must involve real-world tables or charts.

Grade 6 CRT Item Specifications

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Prioritized Standards		Knowledge/Skills Assessed	Item Specifications
3.6.1 Estimate, and convert, units of measure for length, weight, and capacity, within the same measurement system (customary or metric). (P, PS) **3.6.2** Explain how the size of the unit used affects the precision; given two measurements of the same object, select the one that is more precise. (C, P, PS) **3.6.3** Estimate, measure to the required degree of accuracy, derive, and apply formulas to find the perimeter, circumference, and area of plane figures. (C, P, PS) **3.6.5** Use ratios to describe and compare relationships between various objects. (C)	**Concepts**	**3.6.2** Identify a unit of measure with a greater precision. **3.6.3** Identify the correct formula needed to calculate the perimeter, area, and circumference of plane figures. **3.6.5** Identify a correct ratio to describe and/or compare a relationship between various objects.	**3.6.3** Formulas should be for a square, triangle, rectangle and circle only.
	Procedures	**3.6.1** Estimate and convert units of measure for length, weight, and capacity, within the same measurement system (customary or metric). **3.6.2** Given two or more measurements of the same object, select the one that is most precise. **3.6.3** Estimate, measure to the required degree of accuracy, and apply formulas to find the perimeter, circumference, and area of plane figures in a mathematical situation.	**3.6.1** Limited to two conversions. **3.6.3** Item can ask student to measure designated lengths (1/8 inch and millimeters) to the required accuracy. Item can also ask to use formulas to find perimeter, area or circumference.
	Problem Solving	**3.6.1** Estimate and convert units of measure for length, weight, and capacity, within the same measurement system (customary or metric) in real-world problem situations. **3.6.2** Explain how the size of the unit used affects the precision, and why one is more precise. . **3.6.3** Apply formulas to find the perimeter, circumference, and area of plane figures in a real-world problem situation.	**3.6.1** Limited to two conversions. **3.6.2** Item is intended to be used at this level for the **constructed response** type only.

Grade 6 CRT Item Specifications

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Prioritized Standards		Knowledge/Skills Assessed	Item Specifications
4.6.1 Measure angles; identify, describe by properties, classify, compare, and draw regular and irregular quadrilaterals; find the sum of the interior angles of triangles and quadrilaterals. (C, P) **4.6.2** Determine actual measurements represented on scale drawings (e.g., maps, blueprints, and house-plans). (PS) **4.6.3** Using a coordinate grid, identify coordinates for a given point and locate points of given coordinates; plot geometric shapes in all four quadrants. (C, P) **4.6.6** Draw complementary and supplementary angles**;** identify and find measures of complementary and supplementary angles using arithmetic and geometric methods. (C, P)	**Concepts**	**4.6.1** Identify, classify, and compare regular and irregular quadrilaterals; describe the properties of regular and irregular quadrilaterals. **4.6.3** Identify coordinates for a given point and locate points of given coordinates using a coordinate grid. **4.6.6** Identify and recognize measurements of complementary and supplementary angles.	**4.6.3** Item can ask for coordinates in all four quadrants and on both axes of a coordinate plane.
	Procedures	**4.6.1** Measure angles; find the sum of the interior angles of triangles and quadrilaterals. **4.6.3** Plot geometric shapes in all four quadrants of a coordinate plane. **4.6.6**. Find measures of complementary and supplementary angles using arithmetic and geometric methods.	**4.6.1** Item graphic must show the protractor to measure angles. Angles can not be in a figure. Angles must stand alone for graphic to include the protractor. **4.6.3** Items limited to triangles and quadrilaterals. **4.6.6** Item must include a graphic.
	Problem Solving	**4.6.2** Determine actual measurements represented on scale drawings to solve measurement problems in real-world situations.	**4.6.2** Determine actual measurements **only**. If scale is provided no drawing is needed.

Grade 6 CRT Item Specifications

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Prioritized Standards		Knowledge/Skills Assessed	Item Specifications
5.6.1 Interpret data using various formats including circle graphs. (C, PS) **5.6.3** Solve probability problems using a variety of methods including constructing sample spaces and tree diagrams. (C, P, PS) **5.6.6** Analyze data in a variety of formats to draw conclusions and make predictions. (C, PS)	**Concepts**	**5.6.1** Read graphs and describe data presented in graphs. **5.6.3** Identify simple sample spaces. **5.6.6** Compare data collected to the conclusions arrived.	**5.6.1** Items may involve the use of circle graphs. **5.6.6** Item must include both the data and the conclusion arrived at for a quick comparison.
	Procedures	**5.6.3** Determine the probability of an event using sample spaces and/or tree diagrams.	**5.6.3** Items can determine the theoretical probability of an event using sample spaces and/or tree diagrams.
	Problem Solving	**5.6.1** Interpret data using various formats including circle graphs. **5.6.3** Solve probability problems using a variety of methods including constructing sample spaces and tree diagrams. **5.6.6** Analyze and describe the benefits and limitations of various data formats as tools for drawing conclusions and making predictions.	**5.6.1** Interpretations are not to involve making predictions. **5.6.6** Items may ask to identify the strengths and limitations of using various data formats for making predictions and/or formulating conclusions.